

# **MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY**

**International Wire-Silicones  
6298 North 400 East B-105  
Kendallville, Indiana 46755**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1,, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 113-7739-00067	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: June 4, 2001  Expiration Date: June 4, 2006

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## SECTION A

## SOURCE SUMMARY

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This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 and A.2 are descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

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The Permittee owns and operates a stationary wire coating source.

Authorized Individual: Pamela A. Reese, Division Environmental Manager  
Source Address: 6928 North 400 East B-105, Kendallville, Indiana 46755  
Mailing Address: P.O. Box 8, Kendallville, Indiana 46755  
Phone Number: 219-347-5793  
SIC Code: 3357  
County Location: Noble  
County Status: Attainment for all criteria pollutants  
Source Status: Minor Source Operating Permit  
Minor Source, under PSD rules  
Minor Source, Section 112 of the Clean Air Act

### A.2 Emissions Units and Pollution Control Equipment Summary

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This stationary source is approved to operate the following emissions units and pollution control devices:

- (a) Four (4) silicone extrusion lines, known as WC, installed in 1988, exhausted to stacks V1 and V2, capacity: 37,336 copper wire units per hour total.
- (b) Eight (8) finishing lines, known as WF, installed in 1988, exhausted to stack V4, capacity: 24,459 fiberglass wire units per hour total.
- (c) One (1) wire coating line, known as HW, installed in 1988, exhausted to stacks V5 and V6, capacity: 326 copper wire units per hour.
- (d) One (1) parts washer, known as PW, installed in 1988, exhausted to stack V8, capacity: 1.20 gallons per day.
- (e) Nine (9) space heaters, known as SH1 through SH9, exhausted to SH1 through SH9, rated at 0.15 million British thermal units per hour, each.
- (f) One (1) air make-up unit, known as AMU1, rated at 0.32 million British thermal units per hour.
- (g) One (1) air make-up unit, known as AMU2, rated at 5.62 million British thermal units per hour.
- (h) One (1) MIG welder, known as W-1, capacity: 2.859 pounds of wire per hour.
- (i) One (1) stick welder, known as W-2, capacity: 4.5 pounds of wire per hour.

- (j) One (1) oxyacetylene flame cutter, known as T-1, capacity: 12.0 inches per minute.
- (k) One (1) plasma flame cutter, known as T-2, capacity: 12.0 inches per minute.
- (l) One hundred and eighty (180) wire braiding machines, twenty (20) wire winding lines, one (1) drill press and one (1) one band saw.

## **SECTION B**

## **GENERAL CONDITIONS**

### **B.1 Permit No Defense [IC 13]**

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

### **B.2 Definitions**

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

### **B.3 Effective Date of the Permit [IC13-15-5-3]**

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

### **B.4 Modification to Permit [326 IAC 2]**

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of operating permits pursuant to 326 IAC 2 (Permit Review Rules).

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source
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### C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential to emit of all criteria pollutants is less than two hundred fifty (250) tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential to emit PM<sub>10</sub>, SO<sub>2</sub>, VOC, NO<sub>x</sub> or CO to 100 tons per year from this source, shall cause this source to be considered a major source under 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

### C.2 Hazardous Air Pollutants (HAPs) [326 IAC 2-7]

Any change or modification which may increase potential to emit to ten (10) tons per year of any single hazardous air pollutant, twenty-five (25) tons per year of any combination of hazardous air pollutants from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

### C.3 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

### C.4 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.5 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.6 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to 326 IAC 2-6.1-6(d)(3):

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.7 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.



- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

**C.8 Opacity [326 IAC 5-1]**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

**C.9 Fugitive Dust Emissions [326 IAC 6-4]**

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

**Testing Requirements**

**C.10 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]**

- (a) Compliance testing on new emissions units shall be conducted within sixty (60) days after achieving maximum production rate, but no later than one hundred eighty (180) days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

### **Compliance Monitoring Requirements**

#### **C.11 Monitoring Methods [326 IAC 3]**

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

#### **C.12 Actions Related to Noncompliance Demonstrated by a Stack Test**

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

### **Record Keeping and Reporting Requirements**

#### **C.13 Malfunctions Report [326 IAC 1-6-2]**

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a) (1) through (6).

- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.14 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.15 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;
  - (5) The results of such analyses; and
  - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this permit;

- (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
- (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
  - (2) A malfunction as described in 326 IAC 1-6-2; or

- (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
- (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (e) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (f) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.17 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:  
  
Compliance Data Section, Office of Air Quality  
Indiana Department of Environmental Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, IN 46206-6015
- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description

- (a) Four (4) silicone extrusion lines, known as WC, installed in 1988, exhausted to stacks V1 and V2, capacity: 37,336 copper wire units per hour total.
- (b) Eight (8) finishing lines, known as WF, installed in 1988, exhausted to stack V4, capacity: 24,459 fiberglass wire units per hour total.
- (c) One (1) wire coating line, known as HW, installed in 1988, exhausted to stacks V5 and V6, capacity: 326 copper wire units per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

#### D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Best Available Control Technology (BACT) for the eight (8) finishing lines, was determined to be the utilization of lower VOC and HAP content lacquer and urethane coatings with a maximum VOC content not to exceed 5.64 pounds per gallon of coating.

### Compliance Determination Requirements [326 IAC 2-1.1-11]

#### D.1.2 Volatile Organic Compounds (VOC)

Compliance with the VOC content limitations contained in Condition D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer.

### Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

#### D.1.3 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC content limit established in Condition D.1.1.
  - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
  - (2) A log of the dates of use;
  - (3) The cleanup solvent usage for each day;
  - (4) The total VOC usage for each day; and
  - (5) The weight of VOCs emitted for each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description

- (d) One (1) parts washer, known as PW, installed in 1988, exhausted to stack V8, capacity: 2.64 gallons per day.
- (h) One (1) MIG welder, known as W-1, capacity: 2.859 pounds of wire per hour.
- (i) One (1) stick welder, known as W-2, capacity: 4.5 pounds of wire per hour.
- (j) One (1) oxyacetylene flame cutter, known as T-1, capacity: 12.0 inches per minute.
- (k) One (1) plasma flame cutter, known as T-2, capacity: 12.0 inches per minute.
- (l) One hundred and eighty (180) wire braiding machines, twenty (20) wire winding lines, one (1) drill press and one (1) one band saw.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

#### D.2.1 Volatile Organic Compounds (VOC)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.2.2 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the welding, flame cutting, wire braiding, wire winding, drill press and band saw operations shall be limited to the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour

### SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

- (e) Nine (9) space heaters, known as SH1 through SH9, exhausted to SH1 through SH9, rated at 0.15 million British thermal units per hour, each.
- (f) One (1) air make-up unit, known as AMU1, rated at 0.32 million British thermal units per hour.
- (g) One (1) air make-up unit, known as AMU2, rated at 5.62 million British thermal units per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

There are no emission limitations and standards or compliance monitoring requirements specifically applicable to the above emission units.



**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6  
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?\_\_\_\_\_, 25 TONS/YEAR SULFUR DIOXIDE ?\_\_\_\_\_, 25 TONS/YEAR NITROGEN OXIDES ?\_\_\_\_\_, 25 TONS/YEAR VOC ?\_\_\_\_\_, 25 TONS/YEAR HYDROGEN SULFIDE ?\_\_\_\_\_, 25 TONS/YEAR TOTAL REDUCED SULFUR ?\_\_\_\_\_, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?\_\_\_\_\_, 25 TONS/YEAR FLUORIDES ?\_\_\_\_\_, 100 TONS/YEAR CARBON MONOXIDE ?\_\_\_\_\_, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?\_\_\_\_\_, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?\_\_\_\_\_. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ?    Y        N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y        N

COMPANY: \_\_\_\_\_ PHONE NO. : \_\_\_\_\_  
LOCATION: (CITY AND COUNTY) \_\_\_\_\_  
PERMIT NO. \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_  
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/20\_\_\_\_        \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/20\_\_\_\_        \_\_\_\_\_ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO<sub>2</sub>, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_  
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_  
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_  
INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

**Please note - This form should only be used to report malfunctions  
applicable to Rule 326 IAC 1-6 and to qualify for  
the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

\* **Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**MINOR SOURCE OPERATING PERMIT  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

<b>Company Name:</b>	<b>International Wire - Silicones</b>
<b>Address:</b>	<b>6298 North 400 East B-105</b>
<b>City:</b>	<b>Kendallville, Indiana 46755</b>
<b>Phone #:</b>	<b>219-347-5793</b>
<b>MSOP #:</b>	<b>113-7739-00067</b>

I hereby certify that International Wire - Silicones is ☒ still in operation.  
☐ no longer in operation.

I hereby certify that International Wire - Silicones is ☒ in compliance with the requirements of MSOP **113-7739-00067**.  
☐ not in compliance with the requirements of MSOP **113-7739-00067**.

<b>Authorized Individual (typed):</b>	<b>Pamela A. Reese</b>
<b>Title:</b>	
<b>Signature:</b>	
<b>Date:</b>	

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance</b>

## **Indiana Department of Environmental Management Office of Air Quality**

### **Technical Support Document (TSD) for a Minor Source Operating Permit**

#### **Source Background and Description**

<b>Source Name:</b>	<b>International Wire-Silicones</b>
<b>Source Location:</b>	<b>6928 North - 400 East B-105, Kendallville, IN 46755</b>
<b>County:</b>	<b>Noble</b>
<b>SIC Code:</b>	<b>3357</b>
<b>Operation Permit No.:</b>	<b>MSOP 113-7739-00067</b>
<b>Permit Reviewer:</b>	<b>Paula M. Cognitore</b>

The Office of Air Quality (OAQ) has reviewed an application from International Wire-Silicones relating to the operation of a wire coating source.

#### **Permitted Emission Units and Pollution Control Equipment**

There are no permitted facilities operating at this source during this review process.

#### **Unpermitted Emission Units and Pollution Control Equipment**

The source consists of the following unpermitted facilities/units:

- (a) Four (4) silicone extrusion lines, known as WC, installed in 1988, exhausted to stacks V1 and V2, capacity: 37,336 copper wire units per hour total.
- (b) Eight (8) finishing lines, known as WF, installed in 1988, exhausted to stack V4, capacity: 24,459 fiberglass wire units per hour total.
- (c) One (1) wire coating line, known as HW, installed in 1988, exhausted to stacks V5 and V6, capacity: 326 copper wire units per hour.
- (d) One (1) parts washer, known as PW, installed in 1988, exhausted to stack V8, capacity: 1.20 gallons per day.
- (e) Nine (9) space heaters, known as SH1 through SH9, exhausted to SH1 through SH9, rated at 0.15 million British thermal units per hour, each.
- (f) One (1) air make-up unit, known as AMU1, rated at 0.32 million British thermal units per hour.
- (g) One (1) air make-up unit, known as AMU2, rated at 5.62 million British thermal units per hour.

- (h) One (1) MIG welder, known as W-1, capacity: 2.859 pounds of wire per hour.
- (i) One (1) stick welder, known as W-2, capacity: 4.5 pounds of wire per hour.
- (j) One (1) oxyacetylene flame cutter, known as T-1, capacity: 12.0 inches per minute.
- (k) One (1) plasma flame cutter, known as T-2, capacity: 12.0 inches per minute.
- (l) One hundred and eighty (180) wire braiding machines, twenty (20) wire winding lines, one (1) drill press and one (1) one band saw.

### **New Emission Units and Pollution Control Equipment**

There are no new facilities proposed at this source during this review process.

### **Existing Approvals**

The source has no previous approvals.

### **Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
SH1- SH9	space heaters	19	0.25	1,500	350

### **Enforcement Issue**

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

### **Recommendation**

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on December 16, 1996. Additional information was received on February 16, March 25, May 19 and October 11, 1999, October 23, 2000 and February 9, 2001.

### **Emission Calculations**

- (a) See pages 1 through 5 of 5 of Appendix A of this document for detailed emissions calculations.

- (b) The following equipment is also located at the source but does not have any emissions or they are negligible: One hundred and eighty (180) wire braiding machines, twenty (20) wire winding lines, one (1) drill press and one (1) one band saw.

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	1.03
PM <sub>10</sub>	1.21
SO <sub>2</sub>	0.018
VOC	51.7
CO	2.56
NO <sub>x</sub>	3.05

HAPs	Potential To Emit (tons/year)
Toluene	2.55
Xylene	0.008
DMF	2.16
MEK	0.822
Benzene	0.00006
Dichlorobenzene	0.00004
Formaldehyde	0.002
Hexane	0.055
Lead	0.00002
Cadmium	0.00004
Chromium	0.001
Manganese	0.001
Nickel	0.0003
TOTAL	6.00

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of VOC are equal to or greater than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

#### Actual Emissions

No previous emission data has been received from the source.

#### County Attainment Status

The source is located in Noble County.

Pollutant	Status
PM <sub>10</sub>	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Noble County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Noble County has been classified as attainment or unclassifiable for all criteria. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions  
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

#### Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	1.03
PM <sub>10</sub>	1.21
SO <sub>2</sub>	0.018
VOC	51.7
CO	2.56
NO <sub>x</sub>	3.05
Single HAP	2.55
Combination HAPS	6.00

This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

#### Part 70 Permit Determination

##### 326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than one hundred (100) tons per year,
- (b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and
- (c) any combination of HAPS is less than twenty-five (25) tons/year.

This is the first air approval issued to this source.

#### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) The parts washer, known as PW is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart TT because halogenated solvents are not used in the parts washer.

#### State Rule Applicability - Entire Source

##### 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not one of the twenty eight (28) listed source categories under 326 IAC 2-2 and all criteria pollutant potential to emit levels are less than 250 tons per year; therefore, the requirements of 326 IAC 2-2 do not apply.



326 IAC 2-6 (Emission Reporting)

This source is located in Noble County and the potential to emit VOC and NO<sub>x</sub> is less than one hundred (100) tons per year, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

**State Rule Applicability - Individual Facilities**

326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) from the one (1) MIG welder, known as W-1, one (1) stick welder, known as W-2, one (1) oxyacetylene flame cutter, known as T-1, one (1) plasma flame cutter, known as T-2, one hundred and eighty (180) wire braiding machines, twenty (20) wire winding lines, one (1) drill press and one (1) one band saw shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

- (b) There are no PM emissions from the extruding, finishing and coating operations; therefore, these operations comply with this rule.

326 IAC 8-1-6 (New facilities; general reduction requirements)

- (a) Since the potential to emit VOC from the eight (8) finishing lines, which function as a single facility, exceeds twenty-five (25) tons per year and there are no other 326 IAC 8 rules that are applicable to this process 326 IAC 8-1-6 applicable. The Best Available Control Technology (BACT) analysis examined three (3) add on controls and a change to lower VOC and HAP coatings. The three (3) control technologies were: thermal oxidation, catalytic oxidation and carbon adsorption techniques. BACT for this source was determined to be the utilization of lower VOC and HAP content lacquer and urethane coatings for the eight (8) finishing lines to reduce overall potential and actual emissions. The source has implemented the conversion of the lacquer and urethane coatings.
- (b) The maximum VOC content of the new coating materials for the eight (8) finishing lines shall not exceed 5.64 pounds per gallon of coating. The coatings currently used at the source are in compliance with this requirement.

326 IAC 8-2-8 (Magnet Wire Coating Operations)

Since the source does not utilize magnet wire and the four (4) silicone extrusion lines, eight (8) finishing lines and one (1) wire coating line do not directly coat the wire the requirements of 326 IAC 8-2-8 do not apply.

**326 IAC 8-2-9 (Miscellaneous Metal Coating)**

First, silicone is extruded over the metal wire. Second, a layer of glass braid is applied over the silicone. Third, a lacquer coating is applied over the glass braid. Since the four (4) silicone extrusion lines eight (8) finishing lines, and one (1) wire coating line do not directly coat the metal wire the requirements of 326 IAC 8-2-9 do not apply.

**326 IAC 8-3-2 (Cold Cleaner Operation)**

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations) for cold cleaning operations constructed after January 1, 1980, the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

**Conclusion**

The operation of this wire coating source shall be subject to the conditions of the attached proposed Minor Source Operating Permit 113-7739-00067.

**Appendix A: State Potential Emissions Calculations  
VOC and Particulate  
From Surface Coating Operations**

**Company Name: International Wires-Silicones**  
**Address City IN Zip: 6298 North 400 East B-105, Kendallville, Indiana 46755**  
**Part 70: T113-7739**  
**Plt ID: 113-00067**  
**Reviewer: Paula M. Miano**  
**Date: December 16, 1996**

Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential tons per year	lb VOC /gal solids	Transfer Efficiency
<b>Wire Coating (WC)</b>																
Silicone DC1604 (Line 3)	10.69	4.5%	2.8%	1.7%	3.0%	96.0%	0.0008700	5700	0.19	0.18	0.90	21.50	3.92	0.00	0.19	100%
E 3427 NAT (Lines 1,2,4)	10.93	3.0%	2.3%	0.6%	2.5%	99.0%	0.0004540	31636	0.07	0.07	0.97	23.36	4.26	0.00	0.07	100%
Gem Type S Silicone Black Ink	7.70	74.5%	0.0%	74.5%	0.0%	20.2%	0.0000001	30982	5.74	5.74	0.02	0.55	0.10	0.00	28.40	100%
Extender	7.10	100.0%	0.0%	100%	0.0%	0.0%	0.0000034	30982	7.10	7.10	0.75	18.02	3.29	0.00	N/A	100%
<b>SUBTOTAL</b>											<b>2.64</b>	<b>63.43</b>	<b>11.58</b>	<b>0.00</b>		
<b>Wire Finishing (WF)</b>																
Urethane Lacquer	7.25	77.5%	0.0%	77.5%	0.0%	17.3%	0.0000327	24459	5.62	5.62	4.49	107.85	19.68	0.00	32.48	100%
Wire Insulating Lacquer	7.61	65.0%	38.7%	26.3%	44.9%	55.1%	0.0000667	24459	3.63	2.00	3.26	78.30	14.29	0.00	3.63	100%
<b>SUBTOTAL</b>											<b>7.76</b>	<b>186.16</b>	<b>33.97</b>	<b>0.00</b>		
<b>Heating Wire (HW)</b>																
PVC	11.38	0.0%	0.0%	0.0%	0.0%	100.0%	0.0041450	326	0.00	0.00	0.01	0.14	0.02	0.00	0.00	100%
Gem Type S Silicone Black Ink	7.70	74.5%	0.0%	74.5%	0.0%	20.2%	0.0000001	326	5.74	5.74	0.00	0.01	0.00	0.00	28.40	100%
Extender	7.10	100.0%	0.0%	100.0%	0.0%	0.0%	0.0000034	326	7.10	7.10	0.01	0.19	0.03	0.00	N/A	100%
<b>SUBTOTAL</b>											<b>0.01</b>	<b>0.33</b>	<b>0.06</b>	<b>0.00</b>		

<b>10.4</b>	<b>250</b>	<b>45.6</b>	<b>0.0</b>

Material	Density (lb/gal)	solvent/day (gal/day)	solvent/hr (gal/hr)	Total Solvent (lb/hr)	Total Solvent (lb/day)	Total Solvent (tons/yr)
<b>Parts Washer (PW)</b>						
Safety-Kleen Premium Solvent	6.70	2.64	0.11	0.74	17.69	<b>3.23</b>

<b>Total VOC (tons/yr)</b>
<b>48.8</b>

State Potential Emissions

Add worst case coating to all solvents

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)  
Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)  
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)  
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)  
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)  
Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \*(8760 hrs/yr) \*(1 ton/2000 lbs)  
Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)  
Tons per year of solvent= (((Density(lb/gal))\*(gal of solvent per hour))\*8760hr)/2000lbs

**HAP Emission Calculations**

**Company Name:** International Wires-Silicones  
**Plant Location:** 6298 North 400 East B-105, Kendallville, Indiana 46755  
**County:** Noble  
**Part 70:** T113-7739  
**Permit Reviewer:** Paula M. Miano  
**Date:** December 16, 1996

Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Dimethyl Formamide	Weight % MEK	Xylene Emissions (tons/yr)	Toluene Emissions (tons/yr)	Dimethyl Formamide Emissions (tons/yr)	MEK Emissions (tons/yr)
<b>Wire Coating (WC)</b>											
Silicone DC1604 (Line 3)	10.69	0.0008700	5700	0.00%	0.00%	0.93%	0.00%	0.000	0.00	2.16	0.00
E 3427 NAT (Lines 1,2,4)	10.93	0.0004540	31636	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
Gem Type S Silicone Black Ink	7.70	0.0000001	30982	6.00%	62.50%	0.00%	0.00%	0.008	0.08	0.00	0.00
Extender	7.10	0.0000034	30982	0.00%	75.00%	0.00%	25.00%	0.000	2.47	0.00	0.82
<b>SUBTOTAL</b>								<b>0.008</b>	<b>2.55</b>	<b>2.16</b>	<b>0.822</b>
<b>Wire Finishing (WF)</b>											
Urethane Lacquer	7.25	0.0000327	24459	0.00%	30.00%	0.00%	0.00%	0.000	7.62	0.00	0.00
Wire Insulating Lacquer	7.61	0.0000667	24459	0.00%	20.00%	0.00%	0.00%	0.000	10.88	0.00	0.00
<b>SUBTOTAL</b>								<b>0.000</b>	<b>18.5</b>	<b>0.00</b>	<b>0.00</b>
<b>Heating Wire (HW)</b>											
PVC	11.38	0.0041450	326	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
Gem Type S Silicone Black Ink	7.70	0.0000001	326	6.00%	62.50%	0.00%	0.00%	0.000	0.00	0.00	0.00
Extender	7.10	0.0000034	326	0.00%	75.00%	0.00%	25.00%	0.000	0.00	0.00	0.00
<b>SUBTOTAL</b>								<b>0.000</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTALS:</b>								<b>(tons/yr): 0.008</b>	<b>21.0</b>	<b>2.16</b>	<b>0.822</b>
								<b>(lb/hr): 0.002</b>	<b>4.81</b>	<b>0.49</b>	<b>0.188</b>
								<b>(g/sec): 0.000</b>	<b>0.605</b>	<b>0.062</b>	<b>0.024</b>

  

<b>TOTAL:</b>	<b>(tons/yr):</b>	<b>24.0</b>
	<b>(lb/hr):</b>	<b>5.49</b>
	<b>(g/sec):</b>	<b>0.691</b>

**METHODOLOGY**

HAPS emission rate (tons/yr) = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Weight % HAP \* 8760 hrs/yr \* 1 ton/2000 lbs

**HAP Emission Calculations**

**Company Name:** International Wire-Silicones  
**Plant Location:** 6298 North 400 East B-105, Kendallville, Indiana 46755  
**County:** Noble  
**MSOP:** 113-7739  
**Permit Reviewer:** Paula M. Cognitore  
**Date:** December 16, 1996

Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Dimethyl Formamide	Weight % MEK	Xylene Emissions (tons/yr)	Toluene Emissions (tons/yr)	Dimethyl Formamide Emissions (tons/yr)	MEK Emissions (tons/yr)
<b>Wire Coating (WC)</b>											
Silicone DC1604 (Line 3)	10.69	0.0008700	5700	0.00%	0.00%	0.93%	0.00%	0.000	0.00	2.16	0.00
E 3427 NAT (Lines 1,2,4)	10.93	0.0004540	31636	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
Gem Type S Silicone Black Ink	7.70	0.0000001	30982	6.00%	62.50%	0.00%	0.00%	0.008	0.08	0.00	0.00
Extender	7.10	0.0000034	30982	0.00%	75.00%	0.00%	25.00%	0.000	2.47	0.00	0.82
<b>SUBTOTAL</b>								<b>0.008</b>	<b>2.55</b>	<b>2.16</b>	<b>0.822</b>
<b>Wire Finishing (WF)</b>											
Urethane Lacquer	7.22	0.0000327	24459	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
Wire Insulating Lacquer	7.56	0.0000667	24459	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
<b>SUBTOTAL</b>								<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
<b>Heating Wire (HW)</b>											
PVC	11.38	0.0041450	326	0.00%	0.00%	0.00%	0.00%	0.000	0.00	0.00	0.00
Gem Type S Silicone Black Ink	7.70	0.0000001	326	6.00%	62.50%	0.00%	0.00%	0.000	0.00	0.00	0.00
Extender	7.10	0.0000034	326	0.00%	75.00%	0.00%	25.00%	0.000	0.00	0.00	0.00
<b>SUBTOTAL</b>								<b>0.000</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTALS:</b>								<b>(tons/yr): 0.008</b>	<b>2.55</b>	<b>2.16</b>	<b>0.822</b>
								<b>(lb/hr): 0.002</b>	<b>0.58</b>	<b>0.49</b>	<b>0.188</b>
								<b>(g/sec): 0.000</b>	<b>0.073</b>	<b>0.062</b>	<b>0.024</b>

  

<b>TOTAL:</b>	<b>(tons/yr):</b>	<b>5.54</b>
	<b>(lb/hr):</b>	<b>1.26</b>
	<b>(g/sec):</b>	<b>0.159</b>

**METHODOLOGY**

HAPS emission rate (tons/yr) = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Weight % HAP \* 8760 hrs/yr \* 1 ton/2000 lbs

# Appendix A: Welding and Thermal Cutting

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Company Name: International Wire-Silicones  
Address City IN Zip: 6298 North 400 East B-105, Kendallville, Indiana 46755  
Permit No./Pit ID: 113-7739-00067  
Reviewer: Paula M. Cognitore  
Date: December 16, 1996

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS * (lb pollutant / lb electrode)				EMISSIONS (lb/hr)				TOTAL HAPS (lb/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc	0	0		0.036				0.000	0	0.000	0	0.000
Metal Inert Gas (MIG)(ER5154)	1	2.859		0.0241	0.00003		0.00001	0.069	0.0000972	0.000	0.0000286	0.000
Stick (E7018 electrode)	1	4.5		0.0211				0.095	0	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055				0.000	0	0.000	0	0.000
Oxyacetylene(carbon steel)	0	0		0.0055				0.000	0	0.000	0	0.000
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)				EMISSIONS (lbs/hr)				TOTAL HAPS (lb/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	1	0.5	12	0.1622	0.0005	0.0001	0.0003	0.058	0.000	0.000	0.000	0.000
Oxymethane	0	0	0	0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma	1	0.5	12					0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS								PM = PM10	Mn	Ni	Cr	Total HAPs
Potential Emissions lbs/hr								0.22	0.00	0.00	0.00	0.00
Potential Emissions lbs/day								5.33	0.01	0.00	0.00	0.01
Potential Emissions tons/year								0.973	0.001	0.0002	0.001	0.002

## METHODOLOGY

\*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column. Consult AP-42 or other reference for different electrode types.

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.

Plasma cutting emission factors are from the American Welding Society study published in Sweden (March 1994).

Welding and other flame cutting emission factors are from an internal training session document.

See AP-42, Chapter 12.19 for additional emission factors for welding.

**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****Company Name: International Wire-Silicones****Address City IN Zip: 6298 North 400 East B-105, Kendallville, Indiana 46755****MSOP: 113-7739****Plt ID: 113-00067****Reviewer: Paula M Cognitore****Date: December 16, 1996**Heat Input Capacity  
MMBtu/hrPotential Throughput  
MMCF/yr

6.97

61.06

Nine (9) radiant heaters two (2) overhead heaters and one (1) furnace.

**Pollutant**

Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
				100.0		
				**see below		
Potential Emission in tons/yr	0.058	0.232	0.018	3.05	0.168	2.56

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 5 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**

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**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name: International Wires-Silicones****Address City IN Zip: 6298 North 400 East B-105, Kendallville, Indiana 46755****Part 70: T113-7739****Plt ID: 113-00067****Reviewer: Paula M Cognitore****Date: December 16, 1996****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	6.411E-05	3.663E-05	2.290E-03	5.495E-02	1.038E-04

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.526E-05	3.358E-05	4.274E-05	1.160E-05	6.411E-05

Methodology is the same as page 4.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.



## BACT Cost Analysis

Facility Name: International Wire-Silicones  
 Location: Kendallville, Indiana  
 Permit No.: T 113-7739-00067  
 Permit Reviewer: MES

### Capital Cost

Option	Base Price	Direct Cost	Indirect Cost	Total
Carbon Adsorption	Not Technically Feasible			
Thermal Oxidation	N/A	N/A	N/A	\$1,826,948
Catalytic Oxidation	N/A	N/A	N/A	\$1,526,219
Material Replacement	N/A	N/A	N/A	\$0

### Annual Operating, Maintenance & Recovery Cost

Option	Direct Cost	Indirect Cost	Capital Recovery Cost	Total
Thermal Oxidation	N/A	N/A	N/A	\$485,959
Catalytic Oxidation	N/A	N/A	N/A	\$474,342
Material Replacement	N/A	N/A	N/A	\$10,000

### Evaluation

Option	Potential Emissions (tons/yr)	Emissions Removed (tons/yr)	Control Efficiency (%)	\$/ton removed
Thermal Oxidation	45.6	41.0	90.0	11,853
Catalytic Oxidation	45.6	43.3	95.0	10,955
Material Replacement	45.6	5.0	11.0	2,000

#### Methodology:

N/A = cost breakdown not available, totals are valid  
 Emissions removed = (potential emissions)\*(control efficiency)  
 \$/ton removed = total annual cost/emissions removed

The cost breakdown is as follows:

**1. Capital Cost**

- a) Base price: purchase price, auxiliary equipment, instruments, controls, taxes and freight.
- b) Direct installation cost: foundations/supports, erection/handling, electrical, piping, insulation, painting, site preparation and building/facility.
- c) Indirect installation cost: engineering, supervision, construction/filed expenses, construction fee, start up, performance test, model study and contingencies.

**2. Annual Cost**

- a) Direct operating cost: operating labor (operator, supervisor), labor and material maintenance, operating materials, utilities (electricity, gas).
- b) Indirect operating cost: overhead, property tax, insurance, administration and capital recovery cost (for ? yrs life of the system at ?% interest rate).